

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A display device comprising:

a substrate on which a photocatalyst is formed,

a first transistor including a first gate electrode, the first transistor being formed over the photocatalyst;

a second transistor including a second gate electrode which is connected to a first drain electrode of the first transistor, the second transistor being formed over the photocatalyst;

an insulating film provided so as to cover the first and the second transistors;

a first electrode ~~of an electroluminescent layer~~, which is connected to a second drain electrode of the second transistor; ~~and~~

an electroluminescent layer formed over the first electrode; and

a second electrode ~~of the electroluminescent layer~~, which is provided over the electroluminescent layer.

2. (Currently amended) A display device comprising:

a substrate on which a photocatalyst is formed,

a first transistor including a first gate electrode ~~which is formed by a droplet discharge method~~ which has a convex curved face, the first transistor being formed over the photocatalyst;

a second transistor including a second gate electrode which is connected to a first drain electrode of the first transistor, the second transistor being formed over the photocatalyst;

an insulating film provided so as to cover the first and the second transistors;

a first electrode ~~of an electroluminescent layer~~, which is connected to a second drain electrode of the second transistor; ~~and~~

an electroluminescent layer formed over the first electrode; and

a second electrode ~~of the electroluminescent layer~~, which is provided over the electroluminescent layer.

3. (Currently amended) A display device comprising:

a substrate on which a photocatalyst is formed,

a first transistor including a first gate electrode ~~which is formed by a droplet discharge method~~ which has a convex curved face, the first transistor being formed over the photocatalyst;

a second transistor including a second gate electrode which is connected to a first drain electrode of the first transistor, the second transistor being formed over the photocatalyst;

a first insulating film provided so as to cover the first and the second transistors;

a second insulating film containing nitrogen which is formed so as to cover the first insulating film;

a first electrode ~~a cathode of an electroluminescent layer~~ which is connected to a second drain electrode of the second transistor; ~~and~~

an electroluminescent layer formed over the first electrode; and

a second electrode ~~an anode of the electroluminescent layer~~ which is provided over the electroluminescent layer.

4. (Currently amended) A display device comprising:

a substrate on which a photocatalyst is formed,

a first transistor including a first gate electrode ~~which is formed by a droplet discharge method~~ which has a convex curved face, the first transistor being formed over the photocatalyst;

a second transistor including a second gate electrode which is connected to a first drain electrode of the first transistor, the second transistor being formed over the photocatalyst;

a first insulating film provided so as to cover the first and the second transistors;

a second insulating film containing nitrogen, which is formed so as to cover the first insulating film;

a first electrode ~~a cathode of an electroluminescent layer~~ which is connected to a second drain electrode of the second transistor; ~~and~~

an electroluminescent layer formed over the first electrode; and

a second electrode ~~an anode of the electroluminescent layer~~ which is provided over the electroluminescent layer,

wherein the electroluminescent layer comprises ~~the cathode,~~ an electron injection layer, an electron transport layer, a light emitting layer, a hole transport layer, and a hole injection layer ~~are stacked in order in the electroluminescent layer.~~

5. (Original) A display device according to any one of Claims 1 through 4, wherein each of the first and the second gate electrodes is formed over an area treated with base pretreatment.

6. (Original) A display device according to Claim 5, wherein the base pretreatment is performed by using photocatalyst.

7. (Original) A display device according to any one of Claims 1 through 4, wherein the first and the second gate electrodes and the first and the second drain electrodes each contain gold, silver, copper, platinum, palladium, tungsten, nickel, tantalum, bismuth, lead, indium, tin, zinc, titanium or aluminum.

8. (Original) A display device according to any one of Claims 2 through 4, wherein ink-jet is used for the droplet discharge method.

9. (Original) A display device according to any one of Claims 1 through 4, wherein the first and the second transistor each include an amorphous semiconductor or a semiamorphous semiconductor.

10. (Original) A display device according to any one of Claims 1 through 4, wherein a scan line is connected to the first gate electrode of the first transistor, a signal line is connected to the first drain electrode of the first transistor, and a protective circuit is provided for the scan line and the signal line,

11. (Original) A television receiver in which a display screen comprises a display device according to any one of Claims 1 through 4.

12. (Currently amended) A method for fabricating a display device, comprising the steps of:

- forming a photocatalyst as a base film over a substrate,
- forming a first conductive film by applying a first liquid composition containing a first conductor over the photocatalyst;
- forming a semiconductor film over the first conductive film;
- forming a second conductive films over the semiconductor film by applying a second liquid composition containing a second conductor, whereby a thin film transistor is formed;
- forming a first insulating film so as to cover the thin film transistor;
- forming a first electrode over the first insulating film;
- forming a second insulating film so as to cover an end portion of the first electrode;
- forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~; and
- forming a second electrode so as to cover the electroluminescent layer.

13. (Currently amended) A method for fabricating a display device, comprising the steps of:

- forming a photocatalyst as a base film over a substrate,
- forming a first conductive film by a droplet discharge method over the photocatalyst;
- forming a semiconductor film over the first conductive film;
- forming a second conductive films over the semiconductor film by a droplet discharge method, whereby a thin film transistor is formed;
- forming a first insulating film so as to cover the thin film transistor;
- forming a first electrode over the first insulating film;
- forming a second insulating film so as to cover an end portion of the first electrode;
- forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~; and
- forming a second electrode so as to cover the electroluminescent layer.

14. (Original) A method for fabricating a display device according to any one of Claims 12 and 13,

wherein the method further comprises a step of first base pretreatment to where the first conductive film is formed before forming the conductive film.

15. (Original) A method for fabricating a display device according to any one of Claims 12 and 13,

wherein the method further comprises a step of second base pretreatment to where the second conductive films are formed before forming the conductive films.

16. (Original) A method for fabricating a display device according to Claim 14, wherein the first base pretreatment is performed by using photocatalyst.

17. (Original) A method for fabricating a display device according to Claim 15, wherein the second base pretreatment is performed by using photocatalyst.

18. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second gate electrodes by a droplet discharge method;

forming a semiconductor film over the first and second gate electrodes;

forming masks over the semiconductor film;

patterning the semiconductor film using the masks;

forming a first and a second source electrodes and a first and a second drain electrodes over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;

forming a columnar conductive film over the second source electrode or the second drain electrode;

forming a first insulating film so as to cover the columnar conductive film and the thin film transistors;

forming a first electrode so as to connect to the columnar conductive film over the first insulating film;

forming a second insulating film so as to cover an end portion of the first electrode;

forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and
forming a second electrode so as to cover the electroluminescent layer.

19. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,
forming a first and a second gate electrodes by a droplet discharge method;
forming a semiconductor film over the first and second gate electrodes;
forming masks over the semiconductor film;
patterning the semiconductor film using the masks;
forming a first and a second source electrodes and a first and a second drain electrodes over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;
forming a first insulating film so as to cover the thin film transistors;
forming a contact hole in the first insulating film over the second source electrode or the second drain electrode;
forming a columnar conductive film in the contact hole;
forming a first electrode so as to connect to the columnar conductive film;
forming a second insulating film so as to cover an end portion of the first electrode;
forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and
forming a second electrode so as to cover the electroluminescent layer.

20. (Original) A method for fabricating a display device according to Claim 19, wherein the masks are formed over the first insulating film by a droplet discharge method, and
the contact hole is formed in the first insulating film by etching using the mask.

21. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second gate electrodes by a droplet discharge method;
forming a semiconductor film over the first and second gate electrodes;
forming masks over the semiconductor film;
patterning the semiconductor film using the masks;
forming a first and a second source electrodes and a first and a second drain electrodes over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;
forming a first insulating film so as to form an opening over the second source electrode or the second drain electrode;
forming a first electrode in the opening of the first insulating film;
forming a second insulating film so as to cover a part of the first electrode;
forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and
forming a second electrode so as to cover the electroluminescent layer.

22. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,
forming a first and a second gate electrodes by a droplet discharge method;
forming a semiconductor film over the first and second gate electrodes;
forming masks over the semiconductor film;
patterning the semiconductor film using the masks;
forming a first and a second source electrodes and a first and a second drain electrodes over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;
forming a columnar organic film over the second source electrode or the second drain electrode;
forming a first insulating film so as to cover the columnar organic film and the thin film transistors;
removing the columnar organic film;
forming a first electrode so as to connect to the second source electrode or the second drain electrode over the first insulating film;

forming a second insulating film so as to cover an end portion of the first electrode;
forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and
forming a second electrode so as to cover the electroluminescent layer.

23. (Original) A method for fabricating a display device according to Claim 22, wherein the first insulating film is repellent to the columnar organic film.

24. (Original) A method for fabricating a display device according to Claim 22, wherein the columnar organic film is removed by water washing.

25. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second gate electrodes by a droplet discharge method;

forming a semiconductor film over the first and second gate electrodes;

forming masks over the semiconductor film;

patterning the semiconductor film using the masks;

forming a first and a second source electrodes and a first and a second drain electrodes over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;

forming an organic film which is repellent to a first insulating film on the surface of the second thin film transistor;

forming a mask over a part of the second source electrode or the second drain electrode;

removing the organic film using the mask;

forming an opening over the part of the second source electrode or the second drain electrode by forming the first insulating film after removing the mask;

forming a first electrode in the opening so as to connect to the second source electrode or the second drain electrode;

forming a second insulating film so as to cover a part of the first electrode;

forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and

forming a second electrode so as to cover the electroluminescent layer.

26. (Original) A method for fabricating a display device according to any one of Claims 18, 19, 21, 22 and 25,

wherein the method further comprises a step of first base pretreatment to where the first and the second gate electrodes are formed before forming the electrodes.

27. (Original) A method for fabricating a display device according to any one of Claims 18, 19, 21, 22 and 25,

wherein the method further comprises a step of second base pretreatment to where the first and the second source electrodes and the first and the second drain electrodes are formed before forming the electrodes.

28. (Original) A method for fabricating a display device according to Claim 26,
wherein the first base pretreatment is performed by using photocatalyst.

29. (Original) A method for fabricating a display device according to Claim 27,
wherein the second base pretreatment is performed by using photocatalyst.

30. (Original) A method for fabricating a display device according to any one of Claims 18, 19, 21, 22 and 25,

wherein channel protective films are formed in contact with the semiconductor film over the first and the second gate electrode.

31. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second source electrodes and a first and a second drain electrodes by a droplet discharge method;

forming a semiconductor film over the first and the second source electrodes and the first and the second drain electrodes;

forming masks over the semiconductor film;

patterning the semiconductor film using the masks;

forming a first and a second gate electrode over the patterned semiconductor films by a droplet discharge method, whereby thin film transistors are formed;

forming a columnar conductive film over the second source electrode or the second drain electrode;

forming a first insulating film so as to cover the columnar conductive film and the thin film transistors;

forming a first electrode so as to connect to the columnar conductive film over the first insulating film;

forming a second insulating film so as to cover an end portion of the first electrode;

forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and

forming a second electrode so as to cover the electroluminescent layer.

32. (Original) A method for fabricating a display device according to Claim 31, wherein the method further comprises a step of first base pretreatment to where the first and the second source electrodes and the first and the second drain electrodes are formed before forming the electrodes.

33. (Original) A method for fabricating a display device according to Claim 31, wherein the method further comprises a step of second base pretreatment to where the first and the second gate electrodes are formed before forming the electrodes.

34. (Original) A method for fabricating a display device according to Claim 32, wherein the first base pretreatment is performed by using photocatalyst.

35. (Original) A method for fabricating a display device according to Claim 33, wherein the second base pretreatment is performed by using photocatalyst.

36. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second gate electrodes of a first and a second transistors by a droplet discharge method;

forming a semiconductor film over the first and the second gate electrodes with a gate insulating film therebetween;

forming a first and a second source electrodes and a first and a second drain electrodes of the first and the second transistors by a droplet discharge method over the semiconductor film;

forming a contact hole for connecting the first source electrode or the first drain electrode of the first transistor to the second gate electrode of the second transistor by etching the gate insulating film;

forming a conductive film in the contact hole by a droplet discharge method, whereby thin film transistors are formed;

forming a columnar conductive film over the second source electrode or the second drain electrode of the second transistor;

forming a first insulating film so as to cover the columnar conductive film and the first and the second thin film transistors;

forming a first electrode so as to connect to the columnar conductive film over the first insulating film;

forming a second insulating film so as to cover an end portion of the first electrode;

forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~; and

forming a second electrode so as to cover the electroluminescent layer.

37. (Currently amended) A method for fabricating a display device, comprising the steps of:

forming a photocatalyst as a base film over a substrate,

forming a first and a second gate electrodes of a first and a second transistors by a droplet discharge method;

forming a semiconductor film over the first and the second gate electrodes with a gate insulating film therebetween;

patterning the semiconductor film;

forming a first and a second source electrodes and a first and a second drain electrodes of the first and the second transistors by a droplet discharge method over the patterned semiconductor films;

forming a contact hole for connecting the first source electrode or the first drain electrode of the first transistor to the second gate electrode of the second transistor by etching the gate insulating film using the source electrode and the drain electrode;

forming a conductive film in the contact hole by a droplet discharge method, whereby thin film transistors are formed;

forming a columnar conductive film over the second source electrode or the second drain electrode of the second transistor;

forming a first insulating film by a droplet discharge method so as to cover the columnar conductive film and the first and the second thin film transistors;

forming a first electrode so as to connect to the columnar conductive film over the first insulating film;

forming a second insulating film so as to cover an end portion of the first electrode;

forming an electroluminescent layer over the first electrode ~~in an opening provided for the second insulating film~~ by a droplet discharge method; and

forming a second electrode so as to cover the electroluminescent layer.

38. (Original) A method for fabricating a display device according to any one of Claims 36 and 37,

wherein the method further comprises a step of first base pretreatment to where the gate electrodes of the first and the second transistors are formed before forming the electrodes.

39. (Original) A method for fabricating a display device according to any one of Claims 36 and 37,

wherein the method further comprises a step of second base pretreatment to where the first and the second source electrodes and the first and the second drain electrodes of the first and the second transistors are formed before forming the electrodes.

40. (Original) A method for fabricating a display device according to Claim 38, wherein the first base pretreatment is performed by using photocatalyst

41. (Original) A method for fabricating a display device according to Claim 39, wherein the second base pretreatment is performed by using photocatalyst.

42. (Original) A method for fabricating a display device according to any one of Claims 12, 13, 18, 19, 21, 22, 25, 31, 36 and 37, wherein a surface of the first insulating film is planarized by spraying a gas.

43. (Original) A method for fabricating a display device according to any one of Claims 12, 13, 18, 19, 21, 22, 25, 31, 36 and 37, wherein the electroluminescent layer is formed by a droplet discharge method.

44. (Currently amended) A method for fabricating a display device, comprising the steps of:

preparing a treatment system including a first treatment chamber for droplet discharge and a second treatment chamber for planarization;

forming a conductive film and an insulating film over an object by a droplet discharge method in the first treatment chamber;

transferring the object into the second treatment chamber without exposure to the atmosphere; and

planarizing the conductive film and the insulating film in the second treatment chamber by a means for spraying a gas.

45. (Original) A method for fabricating a display device according to Claim 44, wherein each of the conductive film and the insulating film is formed over an area of the object treated with base pretreatment.

46. (Original) A method for fabricating a display device according to Claim 45, wherein the base pretreatment is performed by using photocatalyst.

47. (Original) A method for fabricating a display device according to any one of Claims 13, 18, 19, 20, 21, 22, 25, 31, 36, 37 and 44, wherein ink-jet is use for the droplet discharge method.